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## Abstract

## American Journal of Veterinary Research

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## Evaluation of intramuscularly administered sodium pentosan polysulfate for treatment of experimentally induced osteoarthritis in horses

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Address correspondence to Dr. McIlwraith ([wayne.mcilwraith@colostate.edu](mailto:wayne.mcilwraith@colostate.edu)).**Objective**—To assess clinical, radiographic, histologic, and biochemical effects of sodium pentosan polysulfate (NaPPS) administered IM for treatment of experimentally induced osteoarthritis in horses.**Animals**—18 horses.**Procedures**—Osteoarthritis was induced arthroscopically in 1 middle carpal joint of all horses. Nine horses received NaPPS (3 mg/kg, IM) on study days 15, 22, 29, and 36. Nine control horses received the same volume of saline (0.9% NaCl) solution IM on study days 15, 22, 29, and 36. Clinical, radiographic, gross, histologic, histochemical, and biochemical findings as well as findings of synovial fluid analysis were evaluated.**Results**—No adverse treatment-related events were detected. Induced osteoarthritis caused a substantial increase in lameness, response to flexion, joint effusion, radiographic findings, synovial membrane inflammation, and articular cartilage fibrillation. Articular cartilage fibrillation was substantially reduced by NaPPS treatment, and concentrations of chondroitin sulfate 846 epitope were significantly increased in the synovial fluid of osteoarthritic and nonosteoarthritic joints of treated horses.**Conclusions and Clinical Relevance**—Results indicated that NaPPS has some beneficial disease-modifying effects and may be a therapeutic option for osteoarthritis in horses.

## CITING ARTICLES

[Allison H. Kilborne](#), [Hayam Hussein](#), [Alicia L. Bertone](#). (2017) Effects of hyaluronan alone or in combination with chondroitin sulfate and *N*-acetyl-D-glucosamine on lipopolysaccharide challenge-exposed equine fibroblast-like synovial cells. *American Journal of Veterinary Research* 78:5, 579-588.

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